REMARKS

In view of the fact that allowable subject matter has been indicated to be present in the case, this amendment is submitted in an earnest effort to advance this case to issue without delay.

1. The priority claim acknowledgment of paragraph 12 of PTOL-326 is appreciated.

2. The Examiner has indicated that claims 9 to 14 are allowable subject to amendment of claim 9 to stand in independent form. Claim 9 has been amended to include all of the subject matter of claims 1 and 4 through 8 from which claim 9 was directly or indirectly dependent. Claim 9 is thus allowable together with claims 10 through 14 which depend therefrom.

3. Claims 1 to 8 have been cancelled without prejudice.

4. A new claim 17 has been added. The new claim consists of the subject matter of claim 1, limited to a spike with a metal jacket and solid metal point, wherein the metal point is composed of a more noble metal than that of the jacket.

At page 5, the Examiner has suggested that the primary reason for the allowance of claim 9, inadvertently identified as claim 1 at page 5, line 2 of the specification, is that the tip of the spike was composed of a more noble metal than that of the jacket.

This feature has been included in claim 1 with other limitations with respect to the spike so that claim 17 is believed to be allowable as well. Claim 17 is deemed to distinguish over the art, which does not have any teaching that the tip of the spike should be of a more noble metal than that of the jacket, anywhere that Applicants can see. Claim 17 is thus believed to be allowable together with claims 9 to 14.

5. Claims 15 and 16 have been retained in the case. The Examiner has suggested that Arulanandan et al Patent 4,654,598 alone or together with Tabanou et al patent 5,574,371 disclosed the two spike system each with two distinct and mutually insulated electrode areas as claims 15 and 16 require. The references do not do so individally or in combination, nor do the references suggest the advantage which could be gained by having the region in the ground to be explored electrically excited through two spaced apart

electrode surfaces of two (or more) spikes, using the same spikes but different electrode surfaces to pick up the potential difference. That mode of operation is not taught by Arulanandan et al and more duplication of the electrode bodies or spikes will not achieve that result.

Therefore, claims 15 and 16 must stand allowed under 35 USC 103 as well.

Applicants have reviewed the rejection of claims 15 and 16 and believe that these claims are allowable for the following reasons:

"In column 11, lines 54-57 Arulanandan et al. discloses, that the in situ measurements take place between electrodes 33 and 35.

These electrodes are mounted together to a single stick (see e.g. col. 23, I. 58-60). Due to the fact, that the excitation current flows through both electrodes (33 and 35), only the physical properties of the soil in a small environment around the stick, i.e. the part between electrode 33 and 35, take effect on the measurement.

This is also disclosed in Arulanandan et al. col. 15, I. 57-59. A simultaneous measurement at two electrode sticks of the type disclosed by Arulanandan et al. will give two pointlike

characterizations of the physical soil parameters.
It is not able to perform a physical soil characterization of the sample medium in between two of said electrode sticks.

In contrast to Arulanandan et al. our invention consists of two electrode sticks minimum for the electrical characterization (see_ p. 13, I. 6-9, and p.21, 1.1-11). With this configuration a fourpoint-measurement is performed (see p.3, 1.1-12). The concept of the electrode stick proposed in our application is different form Arulanandan et al. in that way, that electrode 12 of our electrode stick has a high ohmic (see p.3, 1.6) connection to a voltmeter, i.e. no excitation current is flowing.

In contrast the whole excitation current flows through electrode 35 of Arulanandan et al. (see col.10, 61-68). Therefore the invention of Arulanandan et al. is not feasible to perform the advantageous measurement concept of our application according to p. 13, I. 6-9, claim 15, and claim 16.

According to Tabanou et al. (Fig. 9, elements 32, 34) the two electrodes introducing the excitation current generate an electrical potential (element 50) concentrating near the borehole tool disclosed in fig. 9. Therefore and analogue to Arulanandan et al. the soil be characterized in the immediate vicinity surrounding of the tool, which is called "mud" in Tabanou et al.

(see col.1, line 14-17).

However, the method and apparatus disclosed in Tabanou et at. is not capable of performing a characterization of the intermediate sample material between two electrode bodies as disclosed in our application (p.1, I. 7-13, claim 15) of more sophisticated tomographic measurements (p.1, I. 7-13, claim 16)."

Claims 15 and 16 are thus deemed to be allowable together with claims 9 to 14 and 17 and an early notice to that effect is earnestly solicited.

A charge form applying the fee of $200 for one additional independent claim beyond that covered by the original fees to a charge card of the undersigned.

Respectfully submitted,
The Firm of Karl F. Ross P.C.

By: Herbert Dubno, Reg. No. 19,752
Attorney for Applicant

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DATED: December 29, 2004
5676 Riverdale Avenue Box 900
Bronx, NY 10471-0900
Cust. No.: 535
Tel: (718) 884-6600
Fax: (718) 601-1099